

# AVIATION

APRIL 24, 1922

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A Glimpse of Modern Naval Warfare

VOLUME XII

Number 17

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APRIL 24, 1922

# AVIATION

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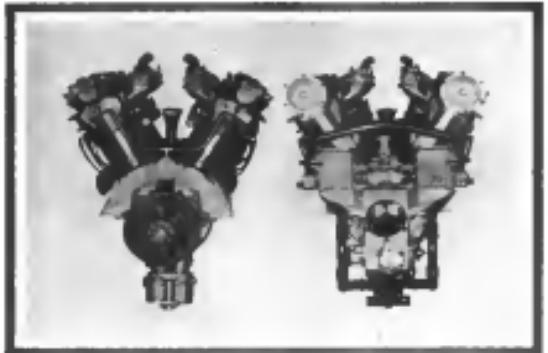
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Vol. XII

APRIL 24, 1932

No. 17

# AVIATION

LORLIE MC'DONALD  
Editor  
VIRGINIA E. CLARK  
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RALPH H. UPTON  
CONTRIBUTING EDITORS

### Another Safety Demonstration

**A**EROMARINE AIRWAYS, America's oldest and largest air transport enterprise, in their second semi-annual report of flying operations submitted to the Board Bureau of Aeronautics can point with justified pride to the fact that not a single passenger or employee was injured during the 319 separate flights made in their flying boats, representing a total of 268,555 passengers-carryings. This record, when placed alongside that made during the preceding months period, which was equally devoid of casualties of any kind is the best demonstration of the safety which can be achieved in modern air transport by an earnestly material and a capable personnel.

Now means of transportation in all the nations of human progress have had to fight an uphill battle against public popularities born of ignorance and fear. The railroad, the steamship, the battleship, the automobile, have all known a period in the history of their development when the public considered it as an extremely hazardous enterprise to ride in them. The airplane has not fully emerged from that period yet, a large section of the public, however, evidently inclined toward the flying machine, not the doubtless. Doubtless are still numerous.

It is for this reason that demonstrations of the kind featured in the "Black Test Flies" constitute a very valuable effort toward—publicity repeated, would not so impress the public with the fact that air transport is slowly but surely growing into the future of modern civilization; at the same time it is a reminder to those engaged in aviation that safety can be achieved only through the very means which apply on land and at sea—careful operation.

### Problems in Seaplane Design

**S**OME interesting points regarding the design of seaplanes was raised by W. D. Manning in a lecture delivered before the Institute of Aeronautical Engineers of London. The lecturer first pointed out that in the matter of hull design the flexible hull, developed from yachting practice, appeared superior to the rigid hull, for the former absorbed the landing shocks far better. However, the flexible (London) type hull involved some serious constructional difficulties, for it required flexible bulkheads, and the question of leak test being satisfactorily solved. The importance of having not only watertight bulkheads but also a double bottom was brought out by the lecturer, and also the desirability of protecting the wing tip floats with bulkheads, as a protection of these floats would not get them out of commission.

Then Mr. Manning stressed the importance of designing flying boat hulls which would be really water-tight, and which could be lowered out for long periods, instead of leaving it to be hoisted up on the slip every night, as is now generally the case. This latter practice the lecturer considered "inadmissible"

as far more damage was inflicted upon seaplanes while they were handled ashore than when they were afloat.

Regarding the wing structure Mr. Manning was of the opinion that there was wanted a type of strut fitting which would not impair the perimeter of holes in the fabric, as the water enters such holes and cuts the wood or encroaches the metal of the wing structure. He also dwelt upon the down-hulls exposed wooden struts presented owing to these being subject to warping under the combined action of temperature and solar heat. Sheet was free from this trouble, but had the drawback of being subject to corrosion. With regard to the latter, Mr. Manning called attention to the fact that corrosion did not occur so fast from the salinity of sea and salt water, but that it was due to different metals being in free contact in an non-homogeneous alloy, in which case corrosion occurred much more rapidly than in the case of simple metals. The possibility of using stainless steel was mentioned.

In the discussion which followed the above-mentioned suggestion was made to build decking busses into which seaplanes would be normally floated for overhauls of the superstructure while an overload of the hull the ship would be passed directly. This solution, we believe, will become an absolute necessity with the gradual increase in size of the flying boats.

### The Sport Airplane

**M**UCH interest is being shown at present in France in the question of the sport airplane, judging by the numerous articles and letters which appear in the oil issue of our French contemporaries.

Most aerial sportsmen are agreed that the ideal sport machine would be one involving the lowest possible upkeep and furnishing the highest possible performance for a relatively low horsepower. But when it comes to a practical solution of the problem there is no unanimity. One school of thought suggests the "monoplane airplane" represented in France by the Avions de Poischoff—and in this country by the Moisant biplane—while the other asks for a small and handy triplane, such as the Sperry Parasol or the Sperry Messenger, not to speak of larger types. The chief complaint seems to be the fact of a low-powered, economical and steady engine, and as the chief opinions are divided between monoplane and water-cooled types of radial, vertical and V form. But whatever the desires of the aeronauts, or the prospective ones, there appears to be a genuine demand for a cheap sport airplane with a range of about 200 miles.

In this country we naturally seem to be further advanced in the design of a satisfactory sport airplane. The "Messenger" biplane, designed by the Engineering Division, Air Service, is for instance an excellent example of high performance with reasonable economy, and the Lawrence engine with which it is fitted has given ample proof of both its reliability, simplicity and low fuel consumption.

# The Naval Air Appropriation, 1922-23

**Bill Reported by House Committee Only Provides \$7,866,500  
As Against \$17,000,000 Estimate Approved by the President**

The Navy appropriation bill for the fiscal year 1922-23 reported by the House committee on Appropriations, which is \$16,000,000 less than the amount asked for by the Secretary of the Navy, Naval Aviation, along with other branches of the service, is threatened with a considerable cut owing to the reduction in the appropriations, only \$7,866,500 being proposed for the Bureau of Aeronautics, Navy Department, instead of the \$17,000,000 estimated by the Secretary of the Navy, and the House Appropriations Committee has voted with the approval of the President. The appropriations of \$17,000,000 asked for by the Secretary of the Navy was itself a reduction of \$10,000,000 on the estimate submitted by the Chief of the Bureau of Aeronautics.

## President's Bill

While new construction is not authorized in the bill proposed, it is believed that previous cuts later will be made. "For aircraft and accessories in course of construction or manufacture on June 30, 1922," the bill states, \$895,000 is provided.

For navigational, photographic, aerological, radio and meteorological instruments, one-half the expense therefor, due to use with aircraft, will be furnished. All aircraft, \$1,000,000 is provided. For the maintenance and repair and operation of the (aircraft) Factory, Flying boat plant, air stations, fleet activities, testing laboratories and the overhauling of planes, \$5,479,000 is authorized, including \$445,000 for equipment of vessels with catapults, \$1,000 for conducting experiments and development work, \$100 for all types of aircraft, \$11,000 is stipulated. For dirigibles, aerial torpedo, dirigible, \$1,000,000 is provided, \$17,000,000 is authorized. This gives a total of \$7,866,500 and the money so operated for aviation shall be disbursed and accounted for as in accordance with existing laws till the last direct.

The bill provides that the Secretary of the Navy is neither to deduct nor add to any sum so appropriated or may make no private property arising out of operations of naval aircraft, where the change do not exceed \$250.

It is further provided that no part of the appropriations shall be expended for the maintenance of more than six heavier-than-air stations on the coasts of the continental United States. The money so appropriated shall be used for the construction of a factory, the maintenance of which is not otherwise provided for.

The sum of \$50,000 is designated for pay of seafarers in the Bureau of Aeronautics, provided that no one is paid at a rate of compensation exceeding \$500 per annum, except the Chief Clerk, at \$250, and three clerks at \$200 each. For dueshous and technical services as are deemed necessary \$60,000 is specified.

## The President's Cut

In addition, the Committee under consideration has reduced \$475,000 for the construction of catapults. These catapults are essential as they make it possible to launch planes from aircraft ships. However, no money is appropriated for their purchase in 1922, \$575,000 will be deducted from the amount available.

Actually, however, the Committee has included \$500,000

which was appropriated for the year under other Bureau

and has included under maintenance an additional obligation for the Bureau of Navigation, \$100,000 which is not otherwise appropriated for the coming fiscal year.

There is then in the total proposed by the Committee an actual reduction of \$50,000 from the amount appropriated in 1922.

The feature of the bill as reported by the Committee is, undoubtedly, in the appropriations under the Bureau of Navigation. Operation and maintenance of the Bureau of Navigation is \$1,000,000, of which \$125,000 is to be spent for the construction of catapults, less \$5,000,000 for operation and maintenance. Operation and maintenance charges during 1922 are already running at this rate with the Aviation Service paid fully in advance. The Committee's figure is a reduction of \$1,000,000 from the figure submitted by the Secretary of the Navy, and appearing in the Budget, and is wholly redundant.

Aerodynamics and Ordnance experiments conducted with German vessels as targets have proved that it has become imperative as a matter of national defense to provide for the most rapid possible development of Aviation both for the Army and the Navy.

This report was approved by both the Secretaries of War and Navy. The total amount—\$17,000,000—asked for is as-

sufficient, and unless a larger amount than the Committee proposes is appropriated, Naval Aviation will be largely impeded during the coming fiscal year.

## Detailed Comment

A detailed comment on the provisions of the Bill report by the Committee follows:

In the report accompanying the House of Representatives bill, H.R. 10,000, of 11 March, 1922, the title "Aviation," the Committee states that the sum proposed "extends the amount appropriated for the present fiscal year for the same purpose by \$500,000." This statement is inaccurate, and gives an entire wrong impression as to the money proposed for Aviation. Actually the money reported by the Committee under its methods is \$100,000 less than that appropriated for this purpose in the Budget. The \$100,000 increase in the Aviation appropriation for maintenance in 1922 was entirely insufficient for that purpose, and in spite of the shooting of aircraft stations and the creation of most of the big aviation service, the expenditure for maintenance during the fiscal year 1921 will exceed the amount appropriated by approximately \$400,000. It is the opinion of the Committee that the amount appropriated by the House of Representatives is approximately \$890,000 less than the actual amount which was spent in 1922 for this purpose.

The Committee, when it states, as it does, that the sum reported as the bill exceeds the amount appropriated for the present fiscal year for the same purpose by \$500,000, neglects the fact that the bill reported by the House of Representatives is \$100,000 less than the amount appropriated for maintenance, insurance and direction, turned over to the Bureau of Navigation, for the construction of catapults, and the amount so operated for Aviation shall be disbursed and accounted for as in accordance with existing laws till the last direct.

The bill provides that the Secretary of the Navy is neither to deduct nor add to any sum so appropriated or may make no private property arising out of operations of naval aircraft, where the change do not exceed \$250.

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ated in 1922.

which will be available in 1923 as it is becoming exhausted and stale, and unless the amount of money appropriated for maintenance is increased, service operations will have to be further curtailed and the production of believe stopped. Furthermore in 1922 the Fleet will be unable to be maintained, thus reducing the end of requirements of operation of aircraft. In 1923 sufficient money should be provided to permit aircraft to accompany the Fleet during all its exercises and this can not be done on my former view than the \$890,000 submitted to Congress by the Secretary of the Navy.

"If the present Naval appropriation bill carrying off \$800 million were passed, the Bureau of Navigation states that only \$240 million could be allotted to aviation duty. This amount proposed for our Naval Aviation would cover \$200 more, thus means that the naval aviation forces will necessarily be not at half. It is the opinion of the Bureau of Navigation that the number of aircraft required of enlisted men in Naval Aviation is 1100, which is not an adequate force to carry on general aviation activities, it is said.

## M. I. T. Builds Glider

With the light plane down up and most of the needed material already on hand the Aeromarine Engineering Section of the Massachusetts Institute of Technology is working up for the beginning of the third term before starting actual construction work on its experimental glider.

### Glider Exceptionally Light

Standing along more or less conventional lines one of the outstanding features of the glider which the Aero Society in



M.I.T. glider as seen from the air

working on will be in its lightness of construction. According to the plans, this will be obtained by the replacing of practically all metal fittings by plywood and construction and flying as far as possible with all bulkily structured members. This will be done, however, without the sacrifice of strength.

The machine will be of the monoplane type with ailerons

wing structures. A departure from general practice will be made in building the wings in three sections so as to reduce the size of each section, thus adding to the ease of construction, the portability and fastness in assembling. The customary landing gear and wheels will be replaced by skids, and the tail skid will be made of balsa wood which is exceedingly light.

## The Standard Wing Section

Some of the foreign gliders were built without the usual number of control surfaces, however in this case, for the sake of positive maneuverability, the designers are using the three surface controls, namely elevator, rudder and ailerons. A single seat is planned, with a weight limit of 150 lbs., and the tail will be used. This combined with the length of the wing structure will give a total circumferent weight calculated at less than 50 lbs., and with a wing spread of 25 ft. and wing area of 130 sq. ft., and a very low loading per unit of area. The overall weight will be 120 lbs.

The Aero Society and the one considered most suitable by the Aeromarine Engineering Department was drawn up by D. C. Raymond, '23, and E. T. Allen, '23. The glider was then redesigned, the most desirable features of the various plans being incorporated as far as possible in the final design.

The stress analysis was then worked through in the design of the various structural members and approved by Prof. P. Werner, who is acting merely as an advisory expert to the men engaged in the work.

## Big Fly of Framingham

Practically all the materials to be used in the construction have already arrived, says The Park, to whom we are indebted for these details. The first flights of the glider are not likely to be made until October, when the members of the Aero Society of Mass. should have had time over again to test it. The members of the Aero Society durante what ever space time that can find. The actual tests will probably be carried out at Framingham, or at some other place where a suitable site is available. Though a number of methods of getting the glider into the air are under consideration, none have as yet been definitely decided. E. T. Allen '23, has been largely responsible for the work of the society to date.

The officers of the society hope to be able to carry out the aerial tests before the end of the school year. If the performance of the glider comes up to the expectations of its designers, another one will probably be built next year in which various aeronautical refinements will be made, at expense with the first machine will suffice.

## A Letter

### Editor, AVIATION

In the issue of Feb. 6, 1922, of your publication you printed under "Foreign News" a note by U. S. Vice Consul Edward B. Montagu at Barranquilla, Colombia, concerning navigation, which name in several parts does not correspond to reality.

First, we do not yet as, clearly from the Colombian government, on the contrary, we have to pay the government \$9.00 for every 15 grams of mail carried by our planes.

Second, our supplies, as which we send to the Consul, are sent by ship, not by plane, but even with a 100 kg. (110 lb.) the minimum weight necessary being of the same type as the one with which a new world's duration record was recently established in the United States.

Third, the flight from Barranquilla to Guatavita, the terminal station of the Bogota Railroad, takes 7 hr. From Guatavita the mail is carried by train to Bogota.

Fourth, the mail is sent weekly to Cartagena twice monthly on Monday at 5 a.m., and returns at 4 p.m. of the same day. The passenger fare on this route is \$55.00 (Colombian). The serial postage to the interior is 30 cents for every 15 grams.

Our agent in New York is not Vassour Correa & Co., but Don George Morris, 44 Whitehall St.

SECRETARY GENERAL ALLEGHENY TRANSPORTATION ASSOCIATION  
Bureau, Panama

# Military Conservatism

Address to the Graduating Class of 1921 by Rear Admiral Wm. S. Sims, U.S.N., President, U.S. Naval War College

The following extracts from the address of Admiral Sims in a class of graduates at the Naval War College bear a direct application to the present development of armament in the Navy. For years the Bureau of Ordnance has been opposed by the Army Department, and now that the idea has become a fact, the opposition under the able advocacy of Rear Admiral Sims, its progress is impeded by lack of appreciation of this new "first law of defense"—ECCLES.

Even since men first began to use weapons to fight each other, military men have been separated for centuries now, a public service being required to supply a dangerous weapon to another who used it.

All men are naturally more or less conservative, certainly all naval officers are decidedly so, but they can afford to be without much danger to the country, whereas, in the case of the ordinary professor, national disaster might easily result from a lack of the same tendency, to recognize the superiority of a new weapon or a new method of warfare.

These military men are conservatives about their weapons. Whether they are so about their methods is the question. The suggestion is that their conservatism may be so dangerous that it is highly important that they should adopt their roads in logical thinking as to evaluate, at least earnestly, this danger.

It will be useful to invite attention to certain instances of this defect that are recorded in the history of war, and also in certain recent instances that will show the influence it has exerted, and perhaps is still exerting, upon the minds of our leaders.

So strong has been the resistance to the general introduction of any new weapon or methods of warfare that one is almost forced to conclude that the military classes of all ages were all assured from the Ministry of War their respective countries. However this may be, it may be stated in general terms that most arguments in favor of firearms were based upon the failure of every other method of warfare, and that the belief of the advocates of that defect alone has been accepted as a final demonstration. The following are a few examples of the nature of the resistance to questions, beginning with ancient times in order to show that this influence has been continuous, and that such conservatism as we observe at present is a legitimate inheritance from our naval fathers.

## From *Ælfric's Lives*

Considering first, the most primitive weapons, there is no doubt but that the bow was a vastly more efficient instrument of warfare than the sword, the mace, or the pike, but almost without exception it was never accepted as a proper arm for the knight or warrior. The ancients were usually fought with the sword and javelin, and both Greeks and Romans looked upon the bow as plebeian. It was not until the decline of the Roman Empire that the sword was used to any large degree, and the Romans, like the French at Caen in 1241 (A.D. 554) were won by the horse-warriors.

The warriors of medieval Europe carried the bow in the same way. Thus Charlemagne endeavored to dignify and exalt its use by edict and the establishment of schools of archery, but to little avail, for the laws remained, until displaced by firearms, the arms of the inferior classes and the yeomanry.

There was an advance over the bow in power and efficiency but it never became the predominant arm, although it was extensively used during the Crusades. In A.D. 1339, the Latins at Cracow condemned its use as a noxious weapon. This resulted in a partial disengagement of it as a mode of warfare. The attitude of the nobility respecting the crossbow is indicated by the action of Philip of France at the battle of Cracy (August 26, 1346), who rode down his troops

men-at-arms with the words, "Forward and strike down this nation outside, who are thus blocking up the way in our front." But Cracy was won by horses, the English arrows, who under the leadership of the light horsemen, had driven back the long-armed, half-dressed, half-naked, crossbowmen.

"A fine-class English archer," said Prince Louis Napoleon, "who in a single minute was able to draw and discharge his twelve bows with a range of 320 yards, and who in those twelve shots only ever missed his mark, was very lightly esteemed."

It would seem that there was too many centuries a settled preoccupation with the bow, or perhaps another reason was that the bow required less range than the weakness of short-barreled weapons. The prejudice persisted for a considerable period, even after the introduction of firearms.

## Caesar vs. Pyrrhus

Although gunpowder is said to have been discovered in Europe by Roger Bacon in the early years of the 13th century, and by 1318 it was in common use in the arsenal of the city of Florence. This was at the battle of Cascina. Cannons are again mentioned as used in the battle of Cracow (1346). At this time, however, they were looked upon as curiosities more than anything else, and it was the general opinion of military experts that artillery would not supplant the sword and the pike.

In fact the pike or the lance was considered superior to the gun, and as late as the 16th century, in 1547, when the King of France changed his policies to make war on England, he sent to the French ambassador, Louis XIV, while he confessed that he was impressed by the invader's arguments, and that he did not consider them strong enough to warrant such a great change. Pikes were not abolished in France until 1789. Incidentally, they were still supplied to the French in 1793.

Men were not soon free from conservatism as regards the introduction either of gunpowder or of methods of propelling war clubs. For example, it is apparent that guns were used more than clubs in the sea battles of the ancients. The sea was mainly auxiliary. The Egyptians, the Romans and the Greeks all trusted to the sea as a means of freedom from water modifications. This attitude presented quite a modern picture, for the British Admiralty, in 1759, issued the order, "The Spanish Armada (1588) contained a great number of galleys."

Artillery did more to do away with the use than anything else, for the guns occupied the positions of the sailors.

## Ælfric vs. Saltus

Ælfric Malme states in *From 2nd to Stiles*, that, "The going with arms at the instant of release of a ship of war was characteristic of the early days of naval warfare, and it was especially true as regards the Vikings. As a rule of naval intelligence informed that steers would never prevail over oar, the former broke down," and owing to the fact that oars could never be self-contained as a sailing ship. Admiral Banville, a Magistrate of Paris, was very sanguine of the superiority of the oars.

Ælfric again states that, "The discoverer that steers would not easily subdue for the propagation of ships, and he could easily be beaten by the oars, which were far more powerful to effect the construction of war vessels." Rear Admiral Sir William Fremantle (director of naval construction), to whom I have alluded as offering considerable improvement to the qualities of our sailing ships, had, as his biographer states, no love for steamers in any shape. In a letter to Lord Arkwright, he states, "I consider steamers of every description in the greatest peril when it is necessary to

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## AVIATION

so broadly given in shore actions; not alone from their liability to be disabled from shot striking their stern-shots, main-pipes, machinery, etc., but great probability of explosion among its smoke trains!"

Incidentally here above had a long time in commanding high-speed aircrafts of the service of the Americans. It already imposed pressure of war necessity or strong political influence, or both, to cause even its hearing. Fulton and Ericsson are also in point.

## Fulton and Ericsson

Fulton's screw-propeller, a steam-propelled floating battery, consisted of all the elements essential for a battleship-like gunboat and well-proved gun-power, armor, heavy wood, and armor-plating. The latter five feet of solid wood, but naval gunboats used upon metal and iron and heavy ledges to protect these handling trees.

In 1817-18 Ericsson was unable to gain recognition from the Admiralty, and in 1829 he returned to America and, under the patronage of Captain Shickel, one of the few officers who favored the use of steam, was appointed in 1832 to the blockade of the Texas coast. Protection, the first screw vessel ever built in any country.

Ericsson states that, "There was the same prejudice against the adoption of iron for vessels as for the adoption of steam propulsion. Furthermore the arguments of armor were well enough refuted to delay the adoption of these new ships for years. Iron was first used in vessels in 1852, but it was not until 1854 that the British Admiralty began to make experiments with iron ships, and not until 1855 that an iron vessel was produced by Laird."

The introduction of iron was opposed very strenuously for many years. Barraclough states that, "In 1817 Admiral Sir George Elliott circulated a pamphlet designed to stop the adoption of iron by the Admiralty of vast sums of money on the ships ordered by them not because the ships were iron, but because they were iron." That pamphlet was the result of a speech by the speaker of the House of Commons, Mr. Pitt, that he intended that the evidence of the superiority of the iron, and the decisions of the officers of the navy, and the results had derived as of sufficient cause of late years to continue to fight the iron ships of iron against iron."

## Brockholst & H. Mervin-Jones

The long and costly controversy over the adoption of breech-loading guns is too well known to require reference, to mere the very significant fact that purely mechanical differences were constantly allowed to overshadow an important fundamental principle involved. The gun was installed in the ship in the position of the gunner, who had to load and handle and fire his load in the latter part of the 19th century.

But while ordnance experts were vigorously discussing the question as to the end of the gun era which the projectile could best fit into, and were still blind to the profound influence the breech-loader necessarily would exercise upon the design of war vessels, they were so busily engrossed in reading and writing about the great naval battles of their annals that navalists and naval writers, particularly those concerning that great out-of-the-shells of that day, Thos. Wilkes, stated that:

"The old偏見 in favor of solid shot was not easily overcome. The latter were said to be more accurate, and to have greater range and penetration than bushes shell. Officers and men were inclined to believe that solid shot gains its accuracy of the cause of a solid load."

Another argument used against the introduction of guns, like those we have seen, Sir Horatio Nelson, in his work on Naval Gunnery says, "The cause of shell's replacement in the last 25 years, and ranks first fixed steel 17 x 45 d, or 28 x 45 d, and ranks first fixed steel 17 x 45 d, or 28 x 45 d, or 30 x 45 d."

Having in the above account correlated the officials who were before one time of a degree of conservatism that was at least 90% dangerous to the success of their cause, the question arises as to whether the record of our predecessors is any better. It is in a certain extent, because during the last 80 years we have become so accustomed to great advances in all

mechanical appliances and scientific processes that it is hard to surprise us by anything new in these lines.

## Two Significant Facts

It may be useful to invite attention to two very significant facts.

First, that Americans have done distinctly in the lead in originating many important features at naval design, and in the invention of types and weapons of fundamental importance. A good rate as examples may the submarine, the submarine and the torpedo. There are many others.

Second, that, generally speaking, our navy has lagged behind in the adoption and general application of even of our own inventions, and that the reason is that the majority of our inventors have had to go abroad for recognition.

Almost all controversies over questions of the adoption of new methods or weapons have had one perfectly natural feature in common: they have been contests between the inventors with their universally more progressive minds and the more conservative members of the top of the list who had the welfare of the service at heart. Protection had to wait until 1855 for its screw vessel, and the first screw vessel was not built in any country.

Barraclough states that, "There was the same prejudice against the adoption of iron for vessels as for the adoption of steam propulsion. Furthermore the arguments of armor were well enough refuted to delay the adoption of these new ships for years. Iron was first used in vessels in 1852, but it was not until 1854 that the British Admiralty began to make experiments with iron ships, and not until 1855 that an iron vessel was produced by Laird."

The introduction of iron was opposed very strenuously for many years. Barraclough states that, "In 1817 Admiral Sir George Elliott circulated a pamphlet designed to stop the adoption of iron by the Admiralty of vast sums of money on the ships ordered by them not because the ships were iron, but because they were iron." It is not necessary to review the opinions of the Admiralty on this point, as they were clearly set forth in the pamphlet of the speaker of the House of Commons, Mr. Pitt, that he intended that the evidence of the superiority of the iron, and the decisions of the officers of the navy, and the results had derived as of sufficient cause of late years to continue to fight the iron ships of iron against iron."

All competent students of naval warfare have long since recognized the necessity of better armament, particularly of naval gunners, and many naval authorities have long since forced to recommend them to the Congress. Though for a great many years their value has been conspicuously demonstrated on the gun board.

## The Case of the Submarines

The case of the submarines need be hardly more mentioned. Though American designs of this type of vessel are responsible for most of the principles upon which the successful designs were based, they received little encouragement from our navy that not only was the first positive development in foreign nations, but even as late as our entry into the Great War, the importance of this type of vessel was seriously underrated.

The same is true to an even greater degree as regards the development of the seaplane as a weapon. Even while foreign countries were appropriating large sums of money and were making every effort to develop it, our naval authorities were actually resisting its introduction.

These are only a few of the instances of the deadly effect of conservatism on our naval forces. Many other examples could be cited, with probably every more or less radical departure in design, weapons, methods or appliances. Generally speaking, all such improvements have met with more or less effective resistance from those in authority; and the examples cited show that this resistance has been in certain instances so great as even to determine the course of naval development.

Another argument used against the introduction of guns like those we have seen, Sir Horatio Nelson, in his work on Naval Gunnery says, "The cause of shell's replacement in the last 25 years, and ranks first fixed steel 17 x 45 d, or 28 x 45 d, and ranks first fixed steel 17 x 45 d, or 28 x 45 d, or 30 x 45 d."

Having in the above account correlated the officials who were before one time of a degree of conservatism that was at least

as destroyers, submarines and airships when we entered the Great War, and it is for this reason that we still without battle cruises.

The rapid development of the submarine and the airship during the war, and the lack of ships, and especially aircraft, during the war, have shown that these powerful weapons are still in their infancy; that great possibilities of development are clearly in sight, and that it will require the most careful, discreet, and logical consideration upon our part even to keep abreast of the developments in foreign navies, much less to anticipate those developments.

Am I apprehending the consequences of the influence of these revolutionary weapons in a profound sense? I am afraid so.

It is almost in the view of some strategists of naval war that the airplane, fails again, as a submarine, experience clearly shows that airplanes could make a certain percentage of hits upon ship targets, a certainty of the very experienced has disclosed in the ability of bombing planes to injure a vessel by silencing her willingness to stand upon the bridge of the battlefield during the proposed bombing experiments. It is of course not necessary that a civilian should hold such a statement, but it is remarkable that this statement was made by naval strategists by naval admirals who were suffering the blighting influence of

experience as an extent not exceeded by that of any of the battleships just called from the stocks and from power expression.

For example, in regard to the warships, it is interesting at all to the development of the battleship that many of the navy officers advised the difficulty for themselves by not destroying all the claims made by the experts. For example a captain on duty at the Navy Department expressed his opinion that a battleship can shoot down planes as fast as the admiral to get into his flying position, that even if an opponent had a hit, a reaction would be so strong that he would not do much damage, that a battleship operating on the protective deck would not penetrate because T.M.T.

Our navy has in our own time passed through periods of great danger at the little of Hastings we made last year over 1000 hits per minute, and there are even today to some extent, and reinforced was our capacity up to 1000 that a certain force of ships of any efficient may have inflicted us a most devastating defeat.

In my opinion we are now entering a period that may be more still more dangerous if we fail entirely to review the significance of the rapid development of fundamentally new weapons of enormous destructive power and of infinite opportunity to inflict destruction by any means except a direct exposure of combat weapons.

## Standard Engines of the Air Service

In the course of the discussion in the House of the Army appropriation bill on March 24, Representative Ray G. Fitzgerald of Ohio said the following letter from Major Thomas H. Darr, Chief, Engineering Division, A.S., dealing with the aeronautical engines required and developed by the Air Service:

My dear Mr. Fitzgerald—Referring to your inquiry of March 17, I regret that the Appropriations Committee gathered the impression that the Air Service is developing too many aircraft engines. The facts are, we are meeting our development to the bare necessities of the Service. Of course, different engines are required for different purposes, and the advance of engine design is advancing rapidly, and we must keep abreast.

### Types Required

We require the following types of engines for the purposes indicated:

1. Training of men. Reliable durable engines of 150 to 200 hp.

2. Light power for alert work. Radial air-cooled and small V type water-cooled, of 200 to 300 hp.

3. Heavy power. Light, high performance, compact engines of 300 to 400 hp.

4. Corps observation and various other two-seated airships. Reliable, durable, smooth running, ammonia engines of 400 to 500 hp.

5. Heavy bombardment and heavy ground attack. Reliable, durable, long-lived, smooth running engines from 600 to 1000 hp, the larger engines to cover the heavier load of bombs and armament that can be carried.

To all the above requirements we have already designed the following engines for each class of work:

1. Training: (a) The Wright 160 hp, model 35, V-type water cooled engine. (b) The Lorraine radial air-cooled 250 hp, model 100.

2. Light power: The above training engines are used with slight modifications to increase maximum efficiency, which modifications can be made as need.

3. Heavy power: (a) The Wright 200 hp, V-type, 8-cylinder, water-cooled, model 35, engine. (b) Packard, 300 hp, V-type, 12-cylinder, water-cooled, model 1297, engine.

4. Corps observation: (a) Liberty, 400 hp, 12-cylinder, V-type, water-cooled, model 1002, engine. (b) Packard, 400 hp, 12-cylinder, V-type, water-cooled, model 222, engine.

5. Heavy bombardment: McCook Field, 700 hp, 18-cylinder, V type, water-cooled, engine.

### Types Developed

In order to keep the United States abreast of the rapid advancing science of aircraft engine design the development of the following engines in their present state and service by all possible means to project completion of this service to lay the basis for laying them down in this field, which basically considers aircraft performance:

1. Power: (a) Curtiss, 375 hp, 15-cylinder, V-type, water-cooled, engine, the most compact water-cooled present engine of this power yet developed. (b) No satisfactory external leg-powered engine is yet in existence notwithstanding the extensive efforts of foreign designers. The Wright 350 hp radial air-cooled, model 35, engine is under development and shows great promise.

2. Heavy bombardment: McCook Field, 1000 hp, 18-cylinder, water-cooled, engine.

It should be noted that all the above engines are designed along fairly conventional lines. The Air Service however cannot overlook the possibility of suggestions made by commercial engineers, who depend from standard practice and who appear to have a good deal of knowledge in the field of barrel-type, 150 hp present engine. This engine is a distinct departure from conventional practice, being composed of a barrel-shaped engine with side cylinders on each end, horizontally placed. This engine offers possibilities in improving airplane performance due to its compactness, light weight per horsepower, small frontal area, and freedom from vibration.

This is a possibility that should be considered with allusion to the possibility of an airplane with a propeller at the rear of the engine. We are also interested in the possibility of utilizing the engine of smaller aircraft engines where possible. This of course might account for the fact that the Appropriations Committee thought that we, perhaps, were developing too many types.

In addition to the above engine development we are vigorously pushing the development of superchargers to enable us to reach much higher altitudes with our airplanes.

Respectfully,  
THOMAS H. DARR,  
Major, Air Service, Chief Engineering Div.

## The Uses of Airplane Carriers

Naval Air Operations Demand that Airplanes Be Put into the Air in Any Kind of Weather

best, and make it possible to recover planes after they had finished their flights.

### Carrier-Based Flying Deck

The plane of the Navy Department to construct some of the battle cruisers which have been ordered strapped by the Washington Conference, are now being carried out under the orders of the Bureau of Navigation and Naval Air Service, that the place of use of the Navy may be maximized, a well informed naval officer like the great *ADMIRAL*, the main advantages of the airplane carriers—*KIRKON*.

The expression for naval air operations requires that any number of airplanes can put into the air at about once, and naturally arrangements must be made so that the carrier or the platform or a mile or two in fair weather. Airplane carriers answer this purpose because they are the only bases by which airplanes may be used with the least of difficulty and cost.

### Airplane Carrier is Flying Dock

Airplane carriers and, in fact, even to a large number of planes at a time, a number larger number than can be stored on the present type of ships—thus also provide a means for getting these back after they have taken the airplane off if were possible to have planes land on the side alongside of a ship, with the planes on picking them up by means of a derrick, it must be remembered that in time of war the carrier is the slowest ship in speed, and in case of an emergency it would be immediately isolated so that they will never know gunnery fire and would be compelled to park by running alongside under these conditions, and were impossible to pitch up a delicate airplane.

The radius of action of all planes, including bombers, is very limited, and therefore planes have to be protected by fighters. The fighters cannot be in a ship floating, and the placing of planes as ships, regardless of a restricted space, is not enough, and in doing it the Navy is doing the best it can with the means at hand. It is believed that battleship design will eventually be modified so that they will carry fewer guns, and the number of guns sacrificed will give a part of the deck space to planes, so that they can carry a greater number of planes. All are now armed by making control of the sea, and this control of the sea is generally gained by a fleet action, so that one might think of ourselves as taking a role which in its own process, most in a large scale, be devoured. Hence in order to carry planes in large numbers the airplane carrier is essential.

### "Currimen" — What Is It?

Newspaper reports announce the production in Los Angeles of a new lifting gas, called Currimen, which is claimed to be non-explosive and non-inflammable, and find in the further claim is made that its life is essentially that of hydrogen.

In this connection George D. Harrison, formerly secretary of the Aero Club of Southern California, has favored us with the following communication, which is published for the sake of information:

"Currimen, a new gas which is non-explosive and non-inflammable and which can be manufactured cheaply was developed by the International Transportation Co. Metalcarboring Co. It is the discovery of Dr. E. C. Corson, Chief of the Research Department of that company. He has been investigating for years that twenty years to devise a means of producing a safe lifting gas, and in 1918 practically perfected such a process. Since then he has been developing the method of quantity production of the gas in order to obtain a low priced method of aeromotoring with the assurance of instant purity."

"A Btu equal to that of 95 per cent. dry hydrogen is claimed for the new gas, with a much better maintenance of purity than is claimed for hydrogen. Dr. Corson has kept the gas in an air-tight cylinder of his invention for more than a year without noticeable loss of purity. He has found that the gas may be manufactured at less than \$60.00 per 1000 cu. ft., and that its production is feasible wherever machinery can be installed."

"Tests of Currimen have been made at Los Angeles, which witnessed by members of the Aero Club of Southern California, and the Commercial Aircraft Association of Southern California, in which a series of aerial sports were introduced into the gas without causing fire or explosion, and after which small balloons were filled to demonstrate its buoyancy. The actual lift of the Currimen is almost that of hydrogen, but better than helium."





## New 2nd Assistant Postmaster General

Lt. Col. Paul Henderson, of Chicago, whose nomination as 2d Assistant Postmaster General was sent to the Senate by President Hoover on April 4, will have charge of the Air, Railroads, Posts, and Telegraphs.

Mr. Henderson, who has served in the Army and has died from injuries received in the Knechtelkrook Theater disaster, is a native of Chicago and an engineer by profession, but is considered an expert in transportation. He is the son-in-law of Representative Charles H. Munroe, having married Miss Mabel Munroe of Chicago.

At present Mr. Henderson is one of the officers of the Dole Flying Service Co., which he joined in 1927, and has been connected with the Western Airlines Co., of Chicago, for several years. He also served with the Globe Motor Works of Lansing, Mich., where he was associated with Howard Coffin of the Aeromotor Production Board and a member of the committee which developed the Leister Motor during the war. Later Mr. Henderson became president of the Western Airlines Co. and managed all matters connected with the business of the firm.

In 1917 Mr. Henderson resigned from the company to enter the Army, where he was commissioned a Captain in the Ordnance Department on July 3, 1917, and promoted to Major on Feb. 18, 1918. Part of his duty was in France where he was on duty in the port of Nantes. An ordinance officer, he was charged with handling the stores, the freight, ammunition, and supplies for the A.E.F. Schools passed through that port. He was awarded a certificate of merit to his commanding General and in March, 1919, was discharged into the Ordnance Reserve as a Major to rank from April 30, 1918. He appears in the War Department Catalog on June 8, 1919.

After leaving the Army, Mr. Henderson has been Director of the Aeromotor Engineering Co., of Chicago, engaged in the manufacture of bridge operating mechanisms.

Mr. Henderson is thirty-seven years of age, and has three children. In Chicago he is a member of the Hamilton Club and is said to be very popular in a wide circle of friends and acquaintances in that city. Although he has never served in the Post Office Department, nor the Air Service, his wide experience in transportation, particularly in the field of aviation, it is believed he has acquired knowledge well for the duties of his new office, which includes the operation of the Air Mail and Radio Service of the Post Office Department.

## Surplus Army and Navy Aircraft

Surplus airplanes, engines and flying accessories no longer needed by the Army and Navy are being offered at auction for commercial and private purchase. A recent survey of Naval flying equipment has resulted in offering for sale 156 planes ranging in price from \$2000 to \$10,000 each. Some of them are new, while others are used, and a few are without engines, but generally they are worth sold at least three or four times their original value.

Coin prices are not shown, but in a new Navy catalog, last year's catalog showed in some instances that the selling price was one-third of the cost. Last year the Navy disposed of 63 planes, the total receipts for which are not available. Army planes and engines have been sold by sealed bids so far as ten per cent of those original costs. Last year out of 100 surplus aircraft, 100 were sold at auction for a total sum of \$16,156,557, \$20,361,607, disposed of with a future of about ten per cent. Over one million dollars worth of planes and spares was transferred to other government bureaus and five million dollars worth was retained and used in the Air Service.

A recent catalog called for 100 Standard 1A planes located at Houston, Texas, and recently bids were taken for 100 Curtiss 204D training planes located at Seattle. Two hundred Curtiss G5 aircraft at Melfiington, Tenn., have also been put on the market.

The Army recently sold 1300 Hall-Scott motors and 800 other engines. The Curtiss company has represented about 2000 of their training planes for about \$2,000,000 for remodeling service.

## The Italian Type SCA1 Airship

On February 16, last, the earliest arranged arrival of the world was circled in Rome. This ship, called the *Italia*, was built by the *Stabilimento di Costruzioni Aeronautiche* of the *Regia Aeronautica*, and costlier ship of the same type to be completed.

The principal characteristics and dimensions of the *Italia* are the following:

|                             |                 |
|-----------------------------|-----------------|
| Length over all             | 120 ft.         |
| Spanwise                    | 55 ft.          |
| Height                      | 42 ft. 8 in.    |
| Capacity                    | 32,000 cu. ft.  |
| Power plant                 | 2 46 hp. Anzani |
| Capacity                    | 51,000 cu. ft.  |
| Front weight                | 2400 lb.        |
| Dragons left                | 1000 lb.        |
| Crew                        | 66 lb.          |
| Load                        | 304 lb.         |
| Load                        | 350 lb.         |
| Fuel and oil                | 600 lb.         |
|                             | 1200 lb.        |
| Consumption per hr (engine) | 10 lb.          |
| Maximum speed (one engine)  | 58 mph          |
| Cruising speed (one engine) | 32 mph          |
| Range (at maximum speed)    | 500 mph         |
| Range (at maximum speed)    | 600 mph         |
| Surface ceiling             | 6000 ft.        |

This ship possesses a very good performance for its size and load horsepower, and its disposable lift is very satisfactory.



The Italian catalog lists 100, built for the Spanish army—the smallest seaplane in the world.

considering the weight of a usual load under the envelope. Only a few years ago for the same kind of service it would have been necessary to have about 50,000 cu. ft. with a normal capacity, and then the speed would have been much lower. The *Italia* accommodates a crew of two and can take six to three passengers.

## International Aircraft Co.

A new aircraft incorporation known as the International Aircraft Co. has been organized at St. Louis, Mo. The firm has taken its plant and facilities of Valentine Gopalkar, Inc., of 119 Beach Crest Blvd., Kansas City.

The officers of the new company are: H. H. Hawley, president; Francis G. Ross, treasurer; Curtis Shadley, secretary. In addition to building airplanes, propellers and engines and landing supplies, the company will furnish outstanding engineering service.



The Curtiss "Twin Kitten" racing triplane which Bert Acosta is to fly at National Flying Meet at Curtis Field, Minnesota, J. F. on April 30.

## National Flying Meet, April 30

More than forty airships have already been entered in the first of the annual flying meets sponsored by the Army Club of America and the Aeromotor Chamber of Commerce, which will be held at Curtis Field, Garden City, L. I., N. Y., Saturday, April 30.

The Rotary Club of New York is supporting the event which is designed to show the progress made in the development of American commercial aviation during the last six months. The Rotarians will have a special section reserved for them and their friends.

Many new types will be flown at the various exhibitions and contests, including speed trials, precision flying, altitude, efficiency and performance tests and passenger carrying. It is the first of a series of such flying meets to be held throughout the United States this year, to demonstrate to the business and professional public the peculiar qualities of the flying machine in speed and economic operation.

## Spokane News

Raymond Smith and George Steinerker of Lewiston, Idaho, are negotiating for an acquisition of 500 hp. twin engine air mail planes. They will be used to connect Clarkston base on the middle fork of the Salmon river, for the summer dates of hunting which do not yet visit the game region. The distance between Lewiston and the base is about 100 miles, and under present conditions the trip involves seven days of toll by horseback and pack saddle.

Smith believes the trip planes will require to attain a height of 10,000 ft. to serve as a safe altitude for him in case of an emergency return to Spokane or glide into the base. By a contract signed up with the Curtis Aeroplane & Motor Corp. the United States Aeroplane Co. of Spokane is authorized agent of the Curtis firm, and entitled to sell aircraft throughout the Northwest, according to an announcement made by C. H. Meissner, head of the local concern.

Smith has a large stock of parts for Curtis ships and modern as well as obsolete the stock of Standard ship parts as we do at present," Mr. Meissner said.

"This will give us the agency for ships and parts for the entire northwest. We will carry complete parts for every ship now flying in the district. We will specialize in giving quick service on airplane parts and supplies, as well as in carrying on our general flying business."

## Western Airway Service

California started the first regularly scheduled commercial flying service in the country on Sunday, March 26, when six airplanes of the air fleet of the Western Airways Co. took off from the Marine Flying Field in San Francisco. The service is now being maintained between San Francisco and Los Angeles, with a schedule of two regular trips a day, with a 600-mile-way fare.

Flying time between the two terminals at both of which fields have been established, is approximately 2 hr., with stops at Sacramento and Santa Maria for rest and lunch. Eight airplanes will serve the service, carrying either two or four passengers in addition to the pilot, and leaving the Marine Flying Field at 8:30 a.m. and 4:30 p.m. in the morning. Six additional are available to the American Flying Service.

The first flight, on March 26, was made in the nature of a demonstration with several notables of the state and newspaper reporters.

The Western Airways Co., which is offering this service to the public, is the outgrowth of the Thompson Aeroplane Co., which has been in existence since 1926. During the past the company has established 100 aerial routes during the entire three years. The pilots are all men of long flying experience, with over a thousand flying hours on its records.

Commercial operation of the company is in the hands of two well known in California travel circles. Foster Clegg, until recently manager of Camp Casey, on the Yosemite National Park, and W. E. Thompson, formerly manager of the Thompson Aeroplane Co. of Los Angeles, Calif., will be president manager in Los Angeles. J. E. Thompson's business manager, and his brother, R. S. Thompson, a man of long experience and for two years a United States Army flying instructor, will have charge of pilots, ships and equipment.

## Grover C. Loesing Operated On

Grover C. Loesing, president of the Loesing Aeronautical Engineering Corp., was recently operated on for appendicitis at the Knechtelkrook Hospital by Doctor D. W. Morris, Chief Surgeon of St. Luke's Hospital.

The attack was very sudden, but the operation was entirely successful. Mr. Loesing has now left the hospital and is expected to be back at his work in a week or ten days.

# ARMY AND NAVY AIR NEWS

## Air Service

**Sixty Orders.**—First, Lt. Col. Oliver J. Gottschalk, A. S., now at Walker Read General Hospital, Teloson Park, D. C., will report to Major Gen. Walter D. McCull, Medical Department, president of an Army visiting board at Washington, D. C., for examination by the board.

First Lt. Russell H. Williamson, A. S., now on temporary duty at Carlstrom Field, Avondale, Fla., is relieved from duty at Fort Fisher, North Carolina, and will proceed to Fort Fults, Fort McPherson, Ga., and report on or about June 15, 1932.

First Lt. Frank T. Homberger, A. S., is relieved from duty at Carlstrom Field, Avondale, Fla., and will proceed to Fort Fults, Fort McPherson, Ga., and report on or about June 15, 1932, to the commanding officer and advanced observation unit.

First Lt. Col. Charles C. Strickland, A. S., is relieved from duty at Carlstrom Field, Avondale, Fla., and will proceed to Elgin Field, Houston, Tex., and report to the commanding officer on or about April 25, 1932, for duty and advanced training.

First Lt. Col. John E. Epstein, A. S., now on duty at the Montgomery Air Intermediate Depot, Montgomery, Ala., will report to the commanding officer, Third Squadron, Observation for duty.

Capt. Arthur E. Simonson, A. S., is relieved from further duty at Mobile Field, L. I., N. Y., will proceed to Langley Field, Hampton, Va., and assume command, and report to the Commandant of the Corps of Air Service Pilots, the commanding general, Fifth Corps Area, Fort Benjamin Harrison, Md.

First Lt. Col. James B. Dryden, David W. Gandy, Paul H. Koenig and Paul G. Webley, A. S., are relieved from duty at Carlstrom Field, Avondale, Fla., and will proceed to Post Field, Fort McPherson, Ga., and report on or about June 15, 1932, to the commanding commander for duty and advanced observational training.

First Lt. Col. Alfred Cleaves, Jr., Maj. H. Clark, Clayton Shengren and Lt. Col. Paul Whister, A. S., are relieved from duty at Carlstrom Field, Avondale, Fla., and will proceed to the Army landing and field deck were also made.

The AFM, Fausti Fausti's engine handicapped upon starting accidentally setting the plane on fire, which required the attention of Capt. George D. Powers, Inf., obtained in the Air Service, effective June 25, 1932. He will proceed at the proper time to Carlstrom Field, Avondale, Fla., and report in person to the commanding Air Service Pilot School for duty and pilot training in the course beginning on or about July 1, 1932.

**Kelly Field.**—During the week ending March 18, the 12th Squadron at Kelly Field made seven cross country trips (thirteen flights) using five XBRLs and two DBFs. These mark the first cross country trips ever attempted with the XBRLs. The first cross country trip over intersected with the VLB's and the DBFs. This was the first time the XBRLs had been used, but one plane was repaired and the planes returned to Kelly Field without further mishaps. The 12th Squadron promises them an ideal type of ship for cross country flying, if the reputation of the latter can be accurate. The gas consumption is very low.

**Mather Field.**—The advanced training of flying cadets at Mather Field is going along with particular interest in smooth formation flying. The school is about two days away from its first formation maneuvered for practice. The first flight of eight cadets commenced the evolutions (the other eight) on the second day. The Commandant reported: Nine planes of the type started in the station at present will be periodically withdrawn after each year's storage, it is believed. Aircraft in reserve, require nearly as much attention as those used daily, and with limited personnel the problem of upkeep is difficult.

**Lake Field, Hawaii.**—The 4th Squadron (Observation) Cap. H. G. Young, commanding, which has been stationed at Lake Field since Jan. 24, 1930, has been relieved from duty by the 5th Group and ordered to proceed to Honolulu Barracks to inform the members of the Hawaiian Divisional Air Service Headquarters the function of the squadron will be solely in operations in cooperation with problems affecting the Hawaiian Islands. Accompanying the 4th Squadron to duty with its Hawaiian Divisional Air Service is the 11th Photo Section and Signal Intelligence Officer No. 51.

Major George E. Stansbury, Air Service, has been assigned as Divisional Officer, Hawaiian Division. The flying he selected has been used as a surveyor's drift ground, is well suited since the railroad and road, like sufficient space for the needs of the surveyors, etc., etc., will be available throughout the year. Current surveys have been completed for May 15, 1932. The surveyed points are being plotted in the 21st, 22nd and 23rd Infantry Regiments, and the officers are assigned points in the 21st, 22nd and 23rd Infantry Regiments. A study of the hills is being made, and estimates of funds for necessary construction work are being prepared.

**Third Observation Squadron (Reserves).**—Excellent progress has been made in the organization of the Third Observation Squadron, of the 16th Division, which is now 25 percent complete in its organization. The headquarters of the 16th Field Division is in Madison and the headquarters of the 2nd Field Division is in Milwaukee. The Squadron Commander, Capt. Harry C. Coffey, will soon have responsibility for the 16th Field Division, and hope his instructions that they will be some training this year for such efforts as are available.

## Naval Aviation

**Hopkins Roads Naval Air Station.**—The Langley detachment at Hopkins Roads naval air station made 268 precision landings during the week ending March 25. Two tons to the delivery landing and field deck were also made.

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**Biloxi Naval Air Station.**—Reports from the Naval Air Station at Biloxi, Miss., state that the objective conditions that alternate between the two stations are approximately the same. The weather is extremely variable, and the temperature of aircrafts varies considerably.

The average 10-hour biloxi humidity even in the dry season, is said to be 50 per cent. An inspection of three PEs is assembled but held in reserve, showed that their gas tanks had become badly corroded, though placed in reserve after not less than 25 hr. of flying apiece. Although the tanks were dented, however, they did not leak. The AFM, Fausti Fausti, one of the "detachment" in the Canal Zone, the Commandant reported. Nine planes of the type started in the station at present will be periodically withdrawn after each year's storage, it is believed. Aircraft in reserve, require nearly as much attention as those used daily, and with limited personnel the problem of upkeep is difficult.

**Mather Field.**—The advanced training of flying cadets at Mather Field is going along with particular interest in smooth formation flying. The school is about two days away from its first formation maneuvered for practice. The first flight of eight cadets commenced the evolutions (the other eight) on the second day. The Commandant reported: Nine planes of the type started in the station at present will be periodically withdrawn after each year's storage, it is believed. Aircraft in reserve, require nearly as much attention as those used daily, and with limited personnel the problem of upkeep is difficult.

April 24, 1932

## AVIATION

Lieutenant Donald R. Evans, det. U. S. S. Wright 4 in post-graduate course in Electrical Engineering Naval Academy Annapolis, Md.

Lieutenant John S. Farnsworth, det. Naval Air Station Pensacola, Fla., in post-graduate course in Aeronautical Engineering Naval Academy, Annapolis, Md.

Lt. (j.g.) George H. Hinze, RF, det. Naval Air Station, Coco Solo, C. B., to leave next orders.

Lieutenant James H. Stinson, det. Naval Inspector of Aircraft, Gulf Coast Airfield Corp., East Greenwich, R. I., to Inspector of Naval Aircraft, Glenn L. Martin Co., Cleveland, Ohio.

Lieutenant George E. Evans, det. Inspector of Naval Aircraft Material, State Experiment Laboratory, Dearborn, Mich., to duty Glenn L. Martin Co., Cleveland, Ohio.

Capt. Nelson De Milt, 3d, Det. Inspector of Aircraft Material State Experiment Laboratory, Dearborn, Mich., to duty under instruction Clinton Aeroplane & Motor Co., Garden City, L. I., N. Y.

## Marine Corps Aviation

**Flight vs. Airplane.**—A mortal combat in the air between an eagle and a Marine Corps aviator, who is the King of the King, the Air Board himself delighted, took place near Quantico, Va., recently according to *The Newsmen*, a Marine Corps publication.

Lieutenant H. D. Sundstrom was flying over the Potomac near the Quantico field when he saw a flock of birds some distance away and gave chase. At a range of 500 feet he heard a shrill shriek from the flock and saw a hawk, the bald eagle, fly directly toward him. Fortunately for the aviator the hawk did not reach him but struck head-on one of the wire frames of the plane with such force as to break both the knife and the main propeller. Sundstrom, though, caught between two gulls on the wing of the plane, the bird remained clinging with it and Lieutenant Sundstrom made a landing with his catch which measured nine feet from tip to tip of its wings.

**Flight "L."**—**Sixty, Gunan, Ga., L. L.**—An altitude flight of 3000 ft. was made in P-51 by 2d Lt. D. E. Kaylor, Feb. 4. P-51s 3081 and 3082 were tested on Feb. 4 after overhauls.

## Coming Aerautical Events

### AMERICAN

Apr. 16 -- **Fourth Annual Bell Head Race, New York.** Tickets \$5. 25 W. 46th St.

Apr. 26 -- **Spring Show and Display Meet, Curtis Field, Worcester, I. L.**

May 3 -- **Fifth Annual Aircraft Exhibition, Legion Field, Los Angeles.**

May 31 -- **National Balloon Race, Indianapolis.** Flying Meet, Indianapolis, Ind.

June 15-17 -- **Detroit Aerial Water Derby, Detroit.** (Gulf Stream Marine Flying Trophy Competition)

Sept. 13 -- **Detroit Aerial Derby, Detroit.** (Patterson Trophy Race)

Sept. 19 -- **First Annual International Championship Meet.** (In preparation)

### FOREIGN

August -- **Coupe Internationale Schneider, (Seaplane speed races), Mâcon, Italy.**

Aug. 4 -- **Garden Festival Balloon Race, Geneva, Switzerland.**

Aug. 9-14 -- **Sailing and Gliding Competition, Gerafeld, Germany.**

Sept. 22 -- **Coupe Henri Bréguet de la Monthia.** (Distance speed races), France.

American observation trials, if required, to be held about Aug. 31, at Blackford Field, L. I.



At Roosevelt Field

First view of the Pitmead "Puffin" seaplane with wings folded for storage

With two B-12's and one Model 40 Autocarriers in the operating quota, the commanding pilot says it is very hard to carry the usual routine of operations due to the upturn involved, especially with birds. Flying during the past month was carried on at Roosevelt Field, the headquarters of the 1st Flight Section in Madison and the headquarters of the 2nd Flight Section in Milwaukee. The Squadron Commander, Capt. Harry C. Coffey, will soon have responsibility for the 16th Field Division, and hope his instructions that they will be some training this year for such efforts as are available assigned have to be re-looked.

Survivors of the Cessna field off a new flying field for the states recently, prior to its opening. Escorted personnel say the field is made of large pieces of sand and gravel and leveling off, temporarily as far as possible, according to Capt. George D. Powers, Inf., obtained in the Air Service.

Miss Editha Hirschberg, a competitor of national note, took part in a swimming meet held by the Air and Nebraskans stations. An undiluted barbecue has been turned into a swimming pool.

**Use of Naval Reserve Pilots.**—Changes that naval reserve flying officers have "borrowed" on the so much basis by kinds of their naval air service where the officers sought transfer into another service, will be made by Senator Walsh, Massachusetts. Before the Senate last night, he presented his investigation of his allegations of indifference by the navy in the case of those men. His resolve states: His resolution, adopted in December, asserted that the commanding for transfer were unfair and unreasonable and held that the individual ability of the flyers was not given consideration.

Delegates from other states, the committee, the Massachusetts senator said that the 12th Squadron, the 16th Field Division during the war, were about to be forced out of the Navy because they had failed in evasions for which they had no opportunity to prepare and which included subjects wholly unrelated to aviation.

**Sixty Orders.**—Lt. Comdr. Horace T. Dyer, in duty Bu. Aeronautics, Navy Dept., Washington, D. C., to duty George P. Chepko, det. Naval Air Station Pensacola, Fla., in post-graduate course in Radio Engineering Naval Academy, Annapolis, Md.

Lieutenant Donald R. Evans, det. U. S. S. Wright 4 in post-graduate course in Electrical Engineering Naval Academy, Annapolis, Md.

## Foreign News

**Argentina**—Consul General W. Henry Robertson, Buenos Aires, states that the new flying ground and school acquired by the Argentine Aerial Club at San Isidro, alongside the grounds of the River Plate Aviation Co., have been opened for use, more than twenty machines taking part in the ceremony.

**Belgium**—The Aero Club of Belgium has organized an international competition for touring airplanes to be held at Brussels on June 23-25, 1922. The competition is open to touring machines, single-seaters or multi-seaters, whose engine capacity does not exceed 7 liters. The awards will be made for a total of 100 points, allotted as follows: 30 points for minimum space occupied in hangar; 30 points for general economy of the engine; 25 points for slow landing; and 15 points for quick get-off.

The prizes are as follows: The King of Belgium's Challenge Cup, to be retained by the winner for one year; and the following cash prizes: 1st prize, 15,000 francs; 2nd prize, 7,000 francs; and third prize, 3,000 francs.

**Colombia**—According to Edmund B. Montgomery, American Vice Consul at Barranquilla, Colombia offers an opportunity for the establishment of an air transport service.

As the river steamship transportation is uncertain in the dry season, which is now coming on, an air service with machines carrying ten to fourteen passengers would undoubtedly get all the passengers and freight that could be carried, although one drawback to large air boats on the river is the danger from contact with driftwood in starting and landing. The ratification of the American-Colombian treaty should be a help in any negotiations which may have for an end the establishment of such seaplane service on the Magdalena River by American interests in cooperation with Colombian.

**France**—It is reported that the prize of one million francs offered for the best aero engine will probably be augmented by another million, offered by the French Air Minister, for engines of 350 to 450 hp., and weighing not more than 2 lb./hp. It is understood that competing engines will have to pass a reliability run of 240 hr., in stretches of 8 hr. each, and that the total time taken in completing the 240 hr. must not exceed 100 days. The competition will start on March 1, 1924, and entries must be received before Dec. 1, 1923.

Announcement has been made that the Aviation Committee of the Colonial Exchequer have definitely decided to organize a contest for seaplanes from April 17 to 19, under three classes: under 150 hp.; 150 to 400 hp.; and over 400 hp. Eliminatory trials are to take place on April 17, when entered aircraft must ascend to 1000 m. and have on board, in addition to the normal useful load, sufficient fuel for 11½ hr. flight. The course, Marseille-Monaco, is 413 kilometers. Prizes to the extent of over 40,000 francs are offered.

**Italy**—To establish more rapid communications between Italy and Tripolitania, the Secretary of the Colonies, Hon. Girardini, is endeavoring to organize an aerial mail service from Rome to Tripoli that may eventually be used also for the transportation of passengers. For this purpose the Superior Command of Aeronautics has granted the use of the airship Esperia (ex-Bodensee) to make its first flight, which will take place in the coming Spring. In the meantime, while they are completing certain works in order to prepare the airplane for her flight, her commandant, Major Valle, will go to Tripoli personally to make sure of a safe landing.

**Palestine**—The Palestine General Post Office has just announced the inauguration of a fortnightly mail service by airplane from Palestine to Mesopotamia, according to a report received by the Department of Commerce from Consul Southard at Jerusalem. There has been a military service over this route for some time, from Cairo via Palestine and Transjordania. This announcement merely opens the service to the public.



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